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THE SCIENTIFIC AMERICAN,
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By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions; Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Experiments;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

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Wind of the Winter's Night.

Wind of the Winter Night! whence comest thou?
And whither, oh whither, art wandering now?
Sad, sad is thy voice on the desolate moor,
And mournful, oh mournful, thy howl at the door.

Say, where hast thou been on thy cloud-lifted car?
Say, what hast thou seen in thy roamings afar?
What sorrow impels thee, thou boisterons blast,
Thus to mourn and complain as thou journeyest past?

"I've been where the snow on the chill mountain peak
Would have frozen the blood in the ruddiest cheek;
And for many a dismal and and desolate day,
No beam of the sunshine has brighten'd my way.

"I've come from the deep where the storm in its wrath
Spread havoc and death on its pitiless path;
Where the billows arose, as the lightnings flew by,
And twisted their arms in the dun-colored sky:

"And I saw a frail vessel all torn by the wave,
Drawn down, with her crew, to a fathomless grave;
And I heard the loud creak of her keel as I passed,
And the flap of her sail, and the crash of her mast!

"But it smote on my ear, like the tocsin of death,
And she struggled and strove with the water for breath;
'Tis her requiem tune, as I howl through the sky,
And repent of the fury that caused her to die!"

The two Mills.

Two neighbors living on a hill,
Had each—and side by side—a mill.
The one was Jones—a thrifty wight—
Whose mill in every wind went right.
The storm and tempest vainly spent
Their rage upon it—round it went!
E'en when the summer breeze was light,
And hence a village saying rose—
"As sure as Jones's mill, it goes."
Not so with neighbor Smith's—close by—
Full half the time it would not ply—
Save only when the wind was *west*,
Still as a post it stood at rest.
By every tempest it was battered,
By every thunder-gust 'twas shattered,
Through many a rent the rain did filter,
And, fair or foul, 'twas out of kilter;
And thus the saying came at last—
"Smith's mill is made for folks that fast."
Now who can read this riddle right?
Two mills are standing on a height—
One whirling brisk whate'er the weather—
The other idle, weeks together!
Come, gentle reader, lend thine ear,
And thou the simple truth shall hear:
And hark! for here the moral lurks—
Smith held to faith but not to works—
While Jones believed in both,—and so,
By faith and practice made it go!
Smith prayed, and straight sent in his bill,
Expecting Heaven to tend his mill;
And grumbled much, whene'er he found
That wheels ungreased would not go round,
Not so with Jones—for though as prayerful,
To grease his wheels he e'er was careful;
And healed with ready stitch each rent,
That ruthless time or tempest sent—
And thus, by works, his faith expressed;
Good neighbor Jones by Heaven was blessed.

Going to Law.

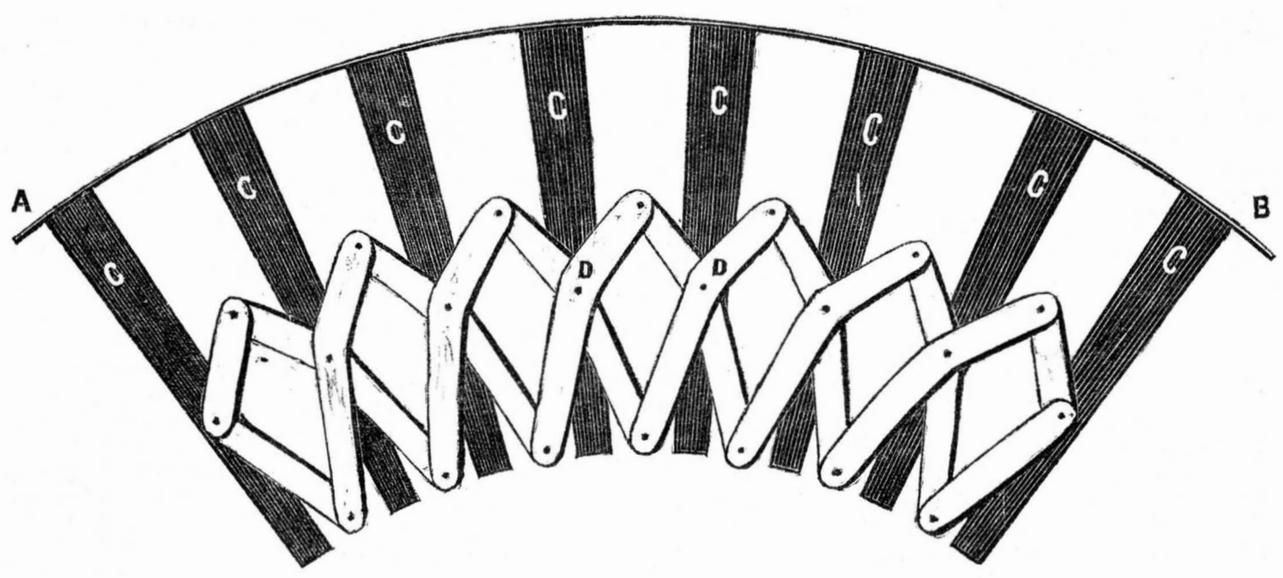
An upper and a lower mill,
Fell out about their water,
To war they went—that is, to law
Resolved to give no quarter.

A lawyer was by each engaged,
And hotly they contended;
When fees grew slack, the war they waged
They judged were better ended.

The heavy costs remaining still,
Were settled without bother—
One lawer took the upper mill,
The lower mill, the other.

NEW PROCESS OF CASE-HARDENING IRON.—This invention consists in making the article of wrought iron, (required to be case-hardened) red hot, and dipping it into cast iron will completely case over it with any required thickness f ocast metal, from 1-16th to 1-2 an inch. The wrought iron article, immediately on being taken out of the cast metal, is immersed in cold water, on taking it out of which, it will be found to be perfectly case-hardened or steeled.

THE CURVING RULE.



EXPLANATION, &c.—There is no person engaged in drawing plans, or making drafts of maps or of machines, but often experiences some little embarrassment for want of means of producing curved lines on radii beyond the extent of dividers. Some have adopted the use of an inconveniently long compass-beam; but a more usual expedient is to bend a piece of brass or wood, and confine it by a cord or otherwise in its bent position, and use it for a curved rule, notwithstanding the unavoidable irregularity of its curve. The curving rule which we here present, may be made of any required length, and may be used for straight lines, or may be curved to any radius beyond that of five inches, and cannot vary from a perfect curve. The face of this rule, A B, consists of a narrow strip of brass plate, which is attached by small screws to the heads of the bars C C, &c. These bars are also connected to each other by a set of thin brass levers, D D, &c. These levers are connected to each other by moveable joints, at their centres and ends: and are attached to the bars by the centre pivots. It will be observed that these levers are longer in one direction from the centre pivots than in the other; the short part of each must bear the same proportion to the longer section, that the distance from the face-plate to the centre pivot does to itself, and that from the centre pivot to the outside pivot united. The pivots of the levers must be set close enough to hold the rule in whater position it may be placed, by the resistance of friction. On this account the centre pivots should consist of small screws that they may be tightened as occasion may require. The screw-heads in the face-plate, must be countersunk and filed smooth. By this arrangement of levers and proportions, a perfectly regular curve will be ensured.

ARCHITECTURAL NOVELTY.—The large stores, lately built at the head of Foster's wharf, Boston, are roofed in a novel manner—an invention of *necessity*. A writer in the Boston *Courier* thus describes the improvement:

"Two enterprizing builders have erected at the head of Foster's wharf, on Broad street, five large stores and covered them with bricks instead of slate, from necessity rathar than from choice; for their great depth, about one hundred and thirty feet elevation for a pitched room. About eighty feet of these roofs have a smal descent, just enough to shed the water. We are thus indebted to accident for an important improvement—a real fire proof roof—all the more important, considering the growing compactness of ous city buildings. These roofs are made very stiff and double-boarded, then covered with tarred paper laid on with hot pitch, shingle fashion, three thicknesses. This operation makes them perfectly tight; but to protect them from fire, and the action of the elements, bricks are laid over the whole, bedded in hot pitch, which rises between the joints, and meets a coat of sand, forming a solid mass, and looks like our best side walks, but smoother and with smaller joints. The bricks were made for the purpose, about one and a quarter inch thick."

IRON DROSS.—A French mechanic formed the idea that by subjecting iron dross to the slow cooling process, a useful species of stone might be obtained; and as iron dross, such as the large furnaces yield, is a useless substance, the announced successful result of his attempts cannot but be matter of interest. The object which the Frenchman sought to accomplish was, to impart to iron dross the compactness ond hardness of granite, and at the same time to save the cost and labor which the hewing of the real stone requires. To this end he contrived to let the iron-refuse, while in a fluid state, run into iron forms, which were previously brought to a red heat, by being placed so as to receive the superfluous flame which issues from the mouth of the furnace; and, in order to insure the slow cooling, these forms are provided with double sides, between which sand is introduced, which is well known to be a bad conductor of heat; the whole is then brought again to a glow heat, and, in like manner, again cooled off. By this procedure, it is asserted, the discoverer has succeeded in forming paving-stones, flags, large building-blocks, and even pipes, of any given form, of a degree of hardness, equal, if not superior, to the best hewn natural granite, and at the most trifling cost.

AFRICAN FEMALES.—I take this opportunity, (says Lander, in his Records of Clapperton's last Expedition,) of expressing my high admiration of the amiable conduct of the African females toward me: in sickness and in health, in prosperity and in adversity, their kindness and affection were ever the same. They have danced and sung with me in health, grieved with me in sorrow, and shed tears of compassion at the recital of my misfortunes. When a boy, and suffering from fever in the West Indies, women of this same race used to take me in their arms, or on their knees, sing and weep over me, and tell me not to die, for that my mother would break her heart to hear the news; and, pointing to the ocean, they cheered my spirits by saying that it laved the shores of England, and that it would shortly bear me on its bosom to my distant home. In fine, through whatever region I have wandered, whether enslaved or free, I have invariably found a chord of tenderness and trembling pity to vibrate in the breast of an African woman; a spirit ever alive to soothe my sorrows and compassionate my affliction; and I never in my life knew one of them to bestow on me a single unpleasant look or angry word.

PATRICK'S COLT.—An old resident of Derryfield, N. H., relates that his grandfather once employed a wild sort of an Irishman to work on his farm. One day, soon after his arrival, he told him to take a bridle and go out and catch the black colt. "Don't come home without him," said the old grandfather. Patrick started, and was gone some time, but at last returned, minus the bridle, with his hands and face badly scratched, as though he had received rough treatment.

"Why, Patrick, what's the matter—what in the name of wonder ails you?"

"An faith, it isn't me, your honor, that 'ill never catch the old black colt again? The devil catch me if I do—bad luck to him! And did'nt he but scratch the eyes out of my head? An' faith, as true as me shoul's me own, I had to climb up a tree after the colt!"

"Nonsense! Where is the beast?"

"An' it's tied to the tree he is, to be sure, yer honor." We all followed Patrick to the spot to get a solution of the difficulty, and on reaching the field, we found, to our no small amusement, that he had been chasing a young *black bear*, which he had succeeded in catching, after a great deal of rough usage on both sides, and actually tied it with the bridle to an old tree Bruin was kept for a long while, and was ever known as "Patrick's colt."

THE GIRLS.—The Editor of the Portland Express, in discoursing upon early rising, speaks thus:—"Up with you! Don't sleep away this beautiful morning! Mary, Helen, Elizabeth, Louisa, Lucretia, Margaret, Harriet, Charlotte, Julia, Sarah, Kate, Cornelia, Jane, Caroline, Adeline, Amelia! and all the lazy girls arouse—wake up—rise and see the sun shine, and thrash away the dew from the beautiful grass. You not only lose the best portion of the day, while you linger in bed, but you depress your spirits and contract sluggish habits. What if you are sleepy! Jump out of bed—fly around—stir about, and in a few moments you will be as bright as larks. We wouldn't give a straw for girls that wouldn't get up early in the morning. What are they good for? Lazy, dumpish creatures—they are not fit for wives or companions. Our advice to young men who are looking out for wives, would be—never select a female who dozes away the precious morning hours. She may be a help-eat, but never a help-meet."

ENGLISH RAILWAY STATISTICS.—It is estimated that a railroad requires about 500 tons of iron per mile. In the last session, bills authorising the construction of 2841 miles of railway were passed, which will require 1,900,000 tons of pig iron, or 1,450,000 tons of the manufactured article! It is supposed the furnaces now in blast yield about 600,000 tons per annum; so that this alone will give three years' employment. Supposing 2500 miles of railway to be sanctioned in the next session, and 2000 in the following, it will require 3,000,000 tons of pig iron for railroads only, a quantity so vast that at the first sight it seems almost impossible for the British iron masters to supply it.

ALPHABETS.—The English Alphabet contains 24 letters; to which if we add j, and v, *consonants*, there will be 26; the French contains 23; the Hebrew, Chaldee, Syriac, and Samaritan, 22 each; the Arabic 28: the Persian 31; the Turkish 33: the Georgian 36, the Coptic 32; the Muscovite 43; the Greek 24; the Latin 22; the Sclavenic 25; the Dutch 26; the Spanish 27; the Italian 20; the Ethiopian and Tartarian, each 202; the Indian of Bengal 21; the Burmese 19; the Chinese have properly speaking, no alphabet, except we call their whole langurge by that name—their letters are *words*; or rather *hieroglyphics*, amounting to 80,000.

A SHEET OF PAPER.—What can be more common place than a sheet of writing paper? And yet when we trace it through all its wanderings, every ramification becomes deeply interesting. First comes the flax or cotton, planted, tended, and sold to the speculating merchant; then its admittance to the factory, where it is wove into vestment for the prince, or mayhap the beggar. Then its sale again and transport across the sea, and arrived at its destination, it is bought once more, and the widow plies her needle at midnight in forming it into a garment, for one who will wear it, tear it, and at last carry it piece by piece away. The rag-monger sells it to the paper manufacturer, it is torn into a thousand shreds, made into a pulp, pressed out, dried, clipped sold to the stationer, and at last used as parchment by the very man who once, perhaps, wore it on his back.

QUESTION FOR QUESTION—A clergyman in Stirlingshire, catechising a number of his parishioners, asked a man by the name of Peter:

"How many years did the children of Israel sojourn in the wilderness?"

To which he replied, "Forty years."

"But can you tell me, sir," said Peter, "how many knives the children of Israel brought back with them from Babylon to Jerusalem?"

The clergyman paused and pondered, but could give no answer.

"Well," said Peter, "they just brought back twenty-nine knives; you will find it in Ezra i. 9."

"ONE AT A TIME."—A constable that had lately been inducted into office, was in attendance on the Court, and was ordered by the Judge to call John Bell and Elisabeth Bell. He immediately began at the top of his lungs—"John Bell and Elisabeth Bell!" "One at a time," said the Judge. "One at a time—one at a time—*one at a time*," shouted the constable. "Now you have done it," exclaimed the Judge, out of patience. "Now you've done it—*now you've done it*—NOW YOU'VE DONE IT!" yelled the constable. There was no standing this; the court, bar, and bystanders broke into a hearty laugh to the perfect surprise and dismay of the astonished constable.

MINES OF WISCONSIN.—The Mineral discoveries in northern Wisconsin are not confined to copper and silver only, but iron also has been found in great abundance. This county of Brown, in which the town of Greer. Bay is situated, is *one vast bed of iron ore*. We have picked up several large specimens on the West side of the river, at different times; and, is the opinion of scientific men, that the Forth Howard Reserve is abundently stored with this valuable Ore. Bay Settlement Township, situated a few miles East of Green Bay, is also rich in this mineral.

In adition to Iron, specimens of Lead have been found upon and near the Wolf, the Baraboo, and the Monomonee rivers; and West of this town the Monomonee indians say there is a great Copper Rock in their country.—*Detroit paper.*

A person applying to the Judge of Probate for a letter of administration, walks up and raps; the Judge bids him walk in, when the stranger inquires: "Does the Judge of Reprobates reside here, sir?" "I am the Judge of Probate, sir," answered the Judge. "Ah, all the same, I suppose," said the stranger, "my father lately died detested, and left a number of fatherless scorpions, of which I am chief. As it is, I being the oldest infidel, the business naturally dissolves on me, and if you will only grant me a letter of condemnation I will see you handsomely sacrificed!"

PATENT LAWS.

An Act to promote the progress of Useful Arts, and to repeal all acts and parts of acts heretofore made for that purpose.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,—That there shall be established and attached to the Department of State an office to be denominated the Patent Office, the chief officer of which shall be called the Commissioner of Patents, to be appointed by the President, by and with the advice and consent of the Senate, whose duty it shall be, under the direction of the Secretary of State, to superintend, execute, and perform all such acts and things, touching and respecting the granting and issuing of patents for new and useful discoveries, inventions, and improvements, as are herein provided for, or shall hereafter be, by law, directed to be done and performed, and shall have charge and custody of all the books, records, papers, models, machines, and all other things belonging to said office. And said Commissioner shall receive the same compensation as is allowed by law to the Commissioner of the Indian Department, and shall be entitled to send and receive letters and packages by mail, relating to the business of the office, free of postage.

SEC. 2. And be it further enacted,—That there shall be in said office an inferior officer, to be appointed by the said principal officer, with the approval of the Secretary of State, to receive an annual salary of seventeen hundred dollars, and to be called the Chief Clerk of the Patent Office, who, in all cases, during the necessary absence of the Commissioner, or when the said principal office shall become vacant, shall have the charge and custody of the seal, and of the records, books, papers, machines, models, and all other things belonging to the said office, and shall perform the duties of Commissioner during such vacancy. And the said Commissioner may also, with like approval, appoint an examining clerk, at an annual salary of fifteen hundred dollars; two other clerks, at twelve hundred dollars each, one of whom shall be a competent draughtsman; one other clerk, at one thousand dollars; a machinist, at twelve hundred and fifty dollars, and a messenger at seven hundred dollars. And said Commissioner, clerks, and every other person appointed and employed in said office, shall be disqualified and interdicted from acquiring or taking, except by inheritance, during the period for which they shall hold their appointments, respectively, any right or interest, directly or indirectly. in any patent for an invention or discovery which has been, or may hereafter be, granted.

SEC. 3. And be it further enacted, That the said principal officer, and every other person to be appointed in the said office, shall, before he enters upon the duties of his office or appointment, make oath or affirmation truly and faithfully to execute the trust committed to him. And the said Commissioner and the Chief Clerk shall also, before entering upon their duties, severally give bonds, with sureties, to the Treasurer of the United States, the former in the sum of ten thousand dollars, and the latter in the sum of five thousand dollars, with condition to render a true and faithful account to him or his successor in office, quarterly, of all moneys which shall be by them respectively received for duties on patents, and for copies of records and drawings, and all other moneys received by virtue of said office.

SEC. 4. And be it further enacted, That the said Commissioner shall cause a seal to be made and provided for the said office, with such device as the President of the United States shall approve; and copies of any records, books, papers, or drawings, belonging to the said office, under the signature of the said Commissioner. or, when the office shall be vacant, under the signature of the Chief Clerk, with the said seal affixed, shall be competent evidence in all cases in which the original records, books, papers, or drawings, could be evidence. And any person making application therefor may have certified copies of the records, drawings, and other papers deposited in said office, on paying, for the written copies, the sum of ten cents for every page of one hundred words; and for copies of drawings, the reasonable expense of making the same.

SEC. 5. And be it further enacted,—That all patents issuing from said office shall be issued in the name of the United States, and under the seal of said office, and be signed by the Secretary of State, and countersigned by the Commissioner of said office, and shall be recorded, together with the descriptions, specifications, and drawings, in the said office, in books to be kept for that purpose. Every such patent shall contain a short description or title of the invention or discovery, correctly indicating its nature and design, and in its terms grant to the applicant or applicants, his or their heirs, administrators, executors or assigns, for a term not exceeding fourteen years, the full and exclusive right and liberty of making, using, and vending to others to be used, the said invention or discovery, referring to the specifications for the particulars thereof, a copy of which shall be annexed to the patent, specifying what the patentee claims as his invention or discovery.

(To be continned.)

TO MAKE SOAP WITHOUT BOILING.—Take one gallon of ley, strong enough to bear up an egg, to every pound of grease. Put the ley into your barrel, and strain the grease hot through a seive or cullendar. Stir this three or four times a day, for several days, or until it thickens. By this process you have soap, clearer, and with much less trouble than in the old way.

QUICK PASSAGE.—The packet ship Havre, Capt. Ainsworth, which sailed from New York on the 17th of November, arrived at Havre on the evening of the 3d Dec.; thus making a passage of only 16 days. This is indeed running the steamers very close.

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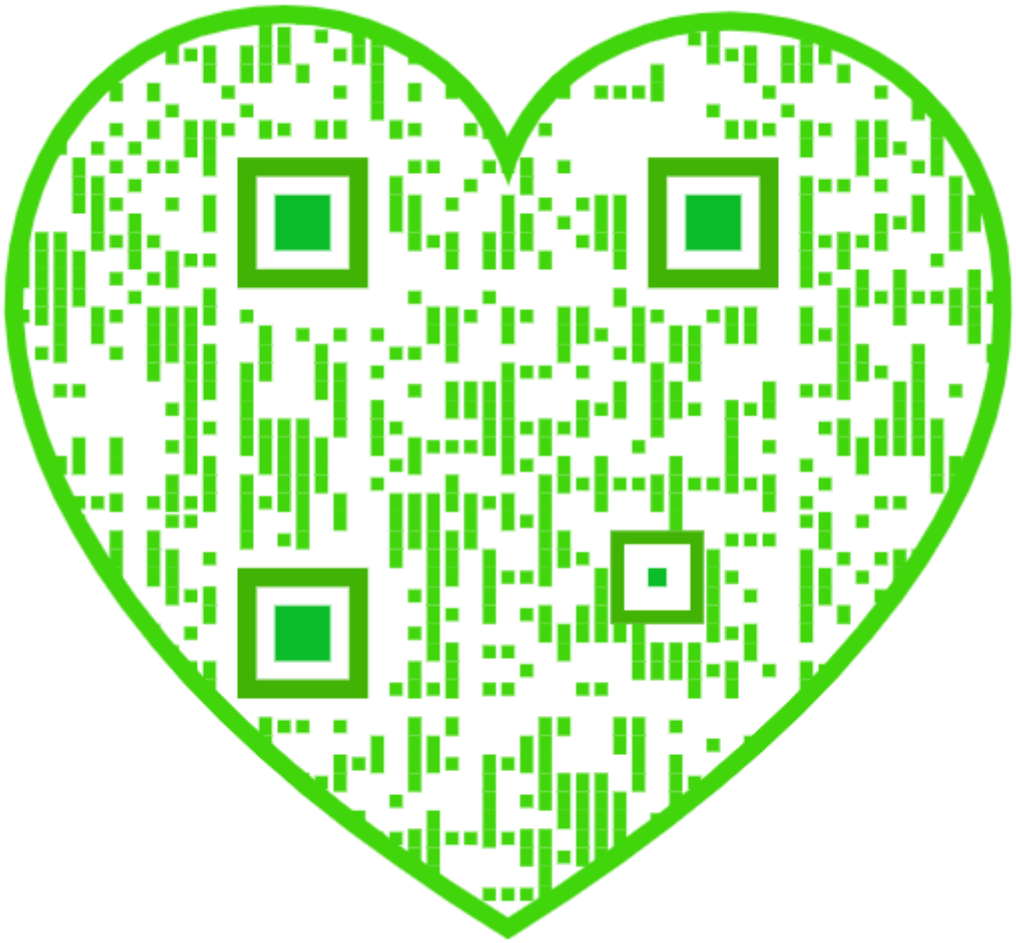
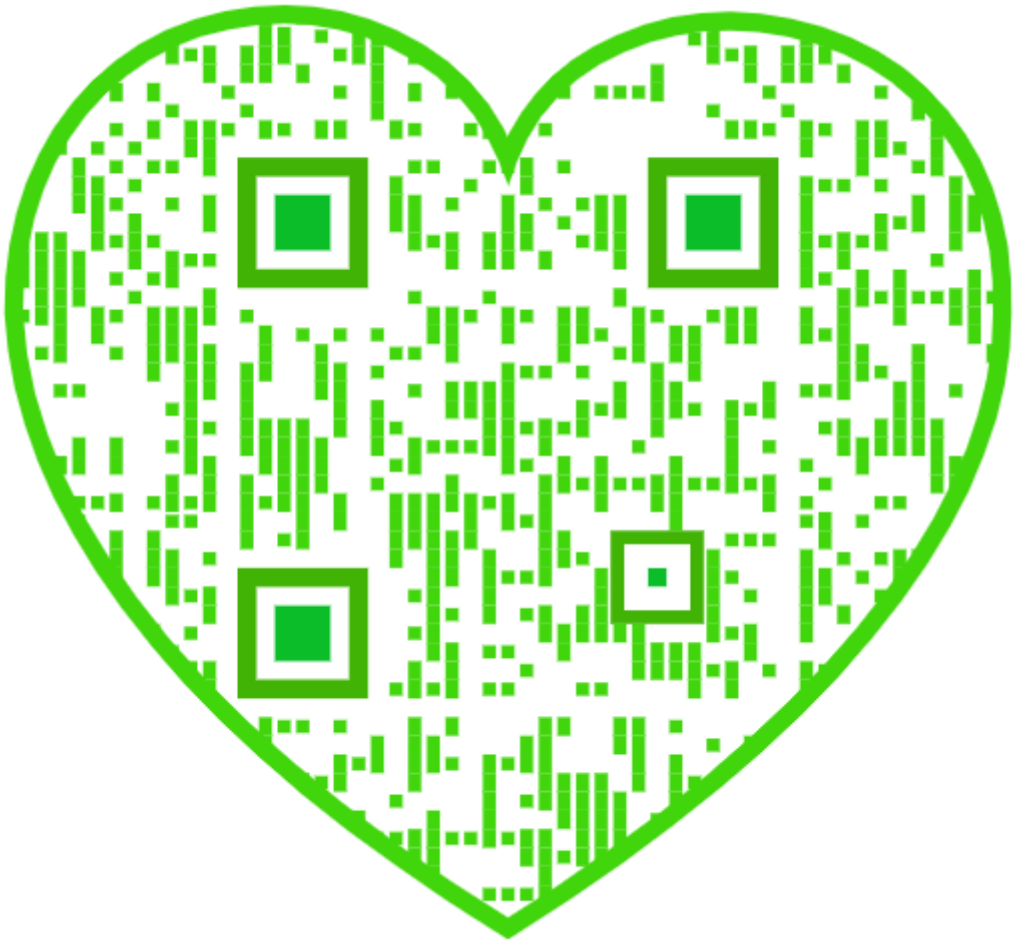




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, JANUARY 22.

BACK NUMBERS.—We are constrained to allude to this subject again, for the purpose of correcting a typographical error which escaped our notice at the time of its insertion, and by which we were made to promise that the back numbers would be re-printed *in a few days*. It should have read "a few weeks." We shall furnish them in the course of the present quarter.

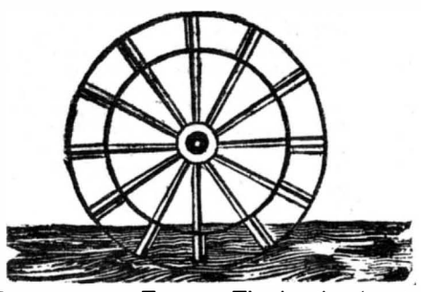
HOTELS AND READING-ROOMS.—Being desirous of having this paper more extensively seen or heard of we have decided to furnish it to hotel keepers and reading rooms for one dollar per annum, being half the regular price.

NUMBER 3 WANTED.—Any person having number 3 of this paper, may receive 8 cents per copy, (double the original price,) by sending it to this office. 30 or more copies are wanted.

AGENTS WANTED.—Many travelling and local agents are wanted, to introduce and extend the circulation of this paper, in every principal village in the United States.

Science of Mechanics.

(Continued from No. 18.)



RESISTANCE OF FLUIDS.—The inertia of water produces resistance against any object, moving or being moved through it; and this resistance is equal to the pressure which moving water produces on a resting or stationery object; and the same rules are observed in calculating this resistance, per square inch of surface presented. The pressure of running water, on the floats of a water-wheel, or a single plank placed in the current of a river, may be calculated by taking into consideration the quantity and weight of water which comes in contact with, or presses against it per minute, or per second of time: so also, the resistance presented by still water, against a moving object, may be calculated from the quantity and weight of water that is displaced or put in motion per second by the paddles, (floats, buckets or ladle-boards,) of the paddle-wheel of a steamboat. We have stated heretofore, that water in falling 16 feet, acquires a velocity of 32 feet per second; of course the power required to put 32 cubic feet of water in motion, with a velocity of 32 feet per second, would be equal to raising 32 cubic feet of water—or an equal weight, which is about 1980 lb., a vertical distance of 16 feet per second, which would be equal to 180pr.—nearly 60 horse powers—and the actual resistance of the water, against the paddles under that velocity, would be 890 lbs. per square foot, provided that quantity of water was actually put in motion, with the specified velocity. But if the actual motion of the paddles through the water be but 16 feet per second; which would be the case if the boat to which the paddle wheel is attached, was moving at the rate of 16 feet per second; then the resistance of the water is reduced to one fourth, or 222 lbs. per square foot. This would be the case if the water had no way to escape from the direct action of the paddles, but to move in a direct course before them; but in most cases the water resedes to the right and left, and vertically from the paddles, which has a tendency to reduce the actual resistance about one third part, or to about two thirds of what it would otherwise be, if confined to a direct course.

If the paddle wheels of a steamboat were made to dip in a short pent stock or flume, which should prevent the escape of water any direction, but that of the paddles, it would effect a saving of nearly one fourth part of the power of the engine. Such a flume, ten feet long, four feet deep, and in breath corresponding with that of the wheel, or the length of the paddles might be constructed of sheet-iron, and attached to each side of the boat, in a manner that would occasion no material resistance in the water, but would add much to the speed of the boat.

To be continued.

A GREAT PEACH FAMILY.—Major Philip Reybold of Delaware, and his four sons are reported to have sent to market, during the last peach season, 90,795 baskets of peaches. Each of the sons occupy separate farms, one of which furnished 17,000 baskets, and the least number furnished by either, was 10,000 bushels. The proceeds could not have come short of $65,000.

PUFFING ABUNDANT.—We observed in a daily paper of Saturday, three several editorial notices of Harnden's lecture at Clinton Hall. If the entire paper was filled with notices on one subject, it would be quite interesting.

WONDERFUL ESCAPE.—A young man, in Livingston county, not long since, fell head foremost into a well thirty five feet deep, and containing about four feet of water He soon righted himself, and was drawn up without any apparent injury.

PLEASE EXCUSE.—If our paper appears dull this week, our readers must attribute the fault, in part, to the dulness of our exchanges; for we can assure them that we have selected the brightest ideas from nearly 200 papers, besides adding the best of our own.

From Sears' New Pictorial and Illustrated Family Magazine.

CHIPPEWAY INDIAN FISHING IN THE ICE—LAKE HURON.

AN INGENIOUS MODE OF FISHING.—Such is the natural state and circumstances of man, that without the aid of some degree of mechanical science, he would be more helpless, or less qualified to procure a tolerable subsistence, than any of the various animals of which he claims to be lord and master. The most barbarous and degraded savages are aware of this fact, and are fain to resort to mechanical contrivance and stratagem, whereby to take advantage of the less sagacious classes; and are convinced that it is scientific attainments, rather than natural capacity, which constitutes the superiority of civilized nations.

Our engraving represents what is termed a British Indian—one of those located near British settlements. He is represented in the usual costume worn by these Indians, and engaged in fishing in the ice. During winter when their supplies of dried fish and flesh are exhausted, they resort to this uncomfortable and cold mode of obtaining food. A hole is broken in the ice with a hatchet, a piece of wood, carved into the shape of a fish and colored to resemble one, having tin fins and tail, and balanced by a piece of lead in the belly, is suspended in the water by a string of gut from a short stick which is held in the left hand. This deception attracts the fish to the spot, when they are struck by the spear held in the right hand and brought up. When cold frosty winds prevail, the Indians frequently erect a temporary hut of poles and blankets over the hole which they have made in the ice, with an opening in the top to admit the light; this not only protects them in some measure from the effects of the cold, but also enables them to see the fish more easily, as the rays of the sun on the snow dazzle and injure the eyes. In the distance is a lighthouse on the shores of Lake Huron, and to the left are the rapids of St. Clair, unfrozen, with Fort Gratia.

The Art of Painting.

(Continued from No. 18.)

MINIATURE PAINTING.—The paints used in this branch, are the prepared cakes, called *water colors*, and which may be procured at stationers' shops in general. Those manufactured by Reeves, of London, are in most general use, though those prepared by Osborne, of Philadelphia, are softer and, in some respects, preferable. These colors being dissolved in water, are applied with small and delicate camel-hair pencils. It is a common custom to dip the pencil in water, and brush it on the cake, until a sufficient quantity of the color is dissolved and mixed with the water, for that immediate occasion: but this process is tedious and takes up much time. A better way is for the practitioner to furnish himself with a series of small cups in which to dissolve small quantities of the paints, and thus keep them in a state ready for use. A dozen or more concavities, half an inch deep and five-eights of an inch in diameter, cut or formed in the side of a piece of pine board, being well coated with white oil paint, and dried, answers well for this purpose. The materials used as the ground for this painting, are thin plates of ivory, or a thick smooth kind of paper termed "Bristol board." The process of drawing the outlines, is the same as described in portrait painting, only that for this purpose, a fine, hard and sharp-pointed lead pencil is used, and erroneous lines are erased occasionally with india-rubber. Having perfected the outlines, if on paper, retrace the same with dilute colors, using for this purpose a fine pointed hair pencil. The outlines of the features may be traced with lake; those of the hair, with burnt umber, and the drapery with blue and black, more or less dense or dilute according to the depth of color or shade intended. Then rub off the lead pencil lines, and proceed to color the whole face, with dilute venitian red, laying it smooth and uniformly. Color the hair with a mixture of black and burnt umber, in proportion to suit, and more or less dilute, with the occasional addition of venitian red, if the hair is of sandy or red color; or yellow ochre if the subject is young and the hair very light. Apply the ground color for the coat, vest. and cravat, nearly as dark as eventually intended. Either black, blue, or green, for the coloring of the coat, should be mixed with white, and applied in a full opaque body. For all other parts, the colors are worked transparently. Proceed to shade the face and features with a *neutral tint*, composed of Prussian blue, lake, and gamboge, in such proportions as will suit the complexion. A mixture of carmine and vermillion is generally used for coloring the cheeks of beautiful faces, and this must be applied by a slow and careful process. Shade the white part of the drapery and of the eyes, with a *neutral shade*, composed of black, blue, lake, and yellow ochre, in such proportions as to resemble, by comparison, the shades of white muslin. In finishing the face and hair, the light parts must be preserved, for white paint must not be used, except to produce some small specs representing the reflection of light from the eyes, or from jewellery. If the colors chance to be two dark, they may be washed off, in part, with a hair pencil and pure water; but such occasions should be avoided. In painting on ivory, the process is similar, but more slow and delicate. The artist may sometimes take advantage of the semi-transparency of the ivory, however, and improve the complexion, by applying such colors to the back of the plate, as will produce the desired effect in front. In the application of the various tints, the artist must apply the colors in such delicate touches of the pencil, that the prints of the brush may not be discovered, but that the colors may appear perfectly blended and the surface smooth. This painting, when properly executed, is much brighter in appearance, and much more durable, than the best oil painting, but should be carefully preserved under a glass to prevent its becoming soiled, as it will not bear washing without injury.

To be continued.

New Inventions.

IMPROVEMENT IN THE TELEGRAPH.—A communication in the Intelligencer mentions an invention by which, with a single wire, communications can be made through the Telegraph with as much rapidity as the most rapid writer can write. And one dot and one mark can be arranged in such combinations as to represent the entire alphabet and the numerals. This improvement will certainly render the cheapest and most simple line of Telegraph perfectly effective for all purposes of communication. It is added that a *caveat* has been entered to secure the patent right of the improvement.

LOCOMOTIVE RAILROAD.—The Berlin Journal informs us that two young mechanicians, named Rochester and Ehrmann, have presented to the Polytechnic Society of that city, a carriage which has with it two iron rails. As the carriage moves on these rails are constantly carried under the wheels, so that they run as if on a railroad. Several Experiments have been made by the Society with the carriage, and they are stated to have been quite satisfactory. A similar plan has been projected in this country for travelling on marshes. In either case the ground must be tolerably level.

A NEW HAND-CAR.—An improvement on the velocipede has recently been made in England, intended for traversing railways. The labor in this improvement is divided between the feet and hands, the motion being induced by handles and pedals, and this is so easily managed that a child may impel it. It is made of iron and weighs about half a ton. It is capable of containing twelve persons.

IMPROVED LOOM.—A new machine has been greatly improved in England by which a fancy weaver can change his pattern in a manner similar to that of changing the tune on a box or barrel organ. Fine satinets are chiefly woven by this machine.

TO CLEANSE AND POLISH METALS.—The most ready and effectual method of brightning brass or copper ware, is to rub it with fine Spanish whiting, moistened with a mixture of one part of nitric acid, with four or five parts of water; then rinse it in clear water, and rub it slightly with dry whiting. But if the metal is of such form that it cannot conveniently be rubbed with whiting, it may be steeped in a mixture of one part nitric acid to three of water, and immediately plunged and rinsed in clear water. Some workmen prefer a mixture of equal parts of sulphuric, nitric, and muriatic acids diluted with water. To old furniture brasses, the diluted acid may be applied with a brush, but must be instantly washed off with clear water, and the metal should be wiped dry, and oiled a little to prevent its tarnishing again so readily. Gold and silver require no other process but to wash them, with common soap and water, and rub them lightly with very fine whiting, and afterwards with a piece of fine woolen cloth, or buff leather. Cast iron may be readily brightened by rubbing or scouring it with beach sand, or powdered brick, moistened with sulphuric acid, diluted with an equal quantity of water. The iron must always be washed in clean water when it has become bright, and should be oiled or waxed to secure it from the action of atmospheric air; otherwise it will become rusted sooner than if the acid had not been applied.

PROBLEM.—A wheel is put in operation with an accellerated motion. Its velocity at the commencement is ten revolutions per minute; but such is its accelleration, that its velocity is doubled at every ten revolutions; that is, the second ten revolutions are performed in half the time of the first; and the third ten in half the time of the second, &c.—*Query*, what will be the velocity of the wheel at the end of the second minute? If any of our readers will give an answer, with demonstrations, we will give them credit therefor.

Curious Arts.

TO MAKE GUNPOWDER.—Pulverise, seperately, five drachms of nitrate of potass, one of sulphur, and one of newly burnt charcoal. Mix them together with a litttle water, so as to make the compound into a dough; form this dough into rolls of the size of a small wire, which may be done by rolling small quantities between two boards. Lay a few of these rolls together, and cut them into very small grains, and place them on a sheet of paper, in a warm place to dry. The dough may be prevented from sticking to the board while rolling it, by rubbing on the boards a little of the dry compound powder- When the grains are thoroughly dry, they are ready for use or experiment. On the same principle gunpowder is manufactured on a large scale, but then the several parts of the operation are performed by machinery, otherwise it would be a very expensive commodity.

TO MAKE THE COMMON FULMINATING POWDERS.—Grind and mix intimately, three parts of nitrate of potass, and one of sulphur. If half a drachm of this compound be placed on a shovel, and over a gentle fire, it well explode with a loud report. It is not, however, attended with any danger. If two grains of chlorate of potass in powder, and of sulphur, be mixed together, and wrapped in a piece of strong paper, and the paper be then struck with a hammer, it will also explode with detonation. This experiment may require some caution. *Note.*—The percussion powder, such as is used for priming the patent percussion rifles, is composed of chlorate of potass, and flour of sulphur, with a trifling proportion of charcoal and loaf sugar, being made into a paste or dough with alcohol—then grained and dried.

TO MAKE THE MERCURIAL FULMINATING POWDER.—Dissolve half an ounce of mercury in three ounces of nitric acid, assisting the solution by a gentle heat. When the solution is cold, pour it upon an equal quantity of strong alcohol previously introduced into a flask, and apply a moderate heat till evervescence is excited. (Do not forget that the mercurial solution must be poured upon the alcohol, and not the alcohol upon the solution.) A white fume will soon begin to undulate on the surface of the liquor, and flow through the neck of the flask, and a white powder will be gradually precipitated. As soon as any precipitate ceases to fall quickly pour the contents of the flask on a filter; wash the powder with pure water, and cautiously dry it by a heat not exceeding that of boiling water. The immediate washing of the powder is material, because it is liable to the re-action of the nitric acid; and while any of that acid adheres to it, is very subject to be discomposed by the action of light. This powder, if very pure and nicely made, explodes by percussion or moderate degrees of heat. *Experiment*: Place one fourth of a grain of this powder, between the ends of two slips of paste-board, and paste or bind them firmly together; hold the ends of the slips over the flame of a candle, and as soon as it becomes warm it will explode with a loud report. This composition is less dangerious than the fulminating compounds of gold or silver, as it never explodes spontaneously; but yet it cannot be handled with too much caution. *Note.* The silver powder, or fulminating silver, with which torpedoes and waterloo crackers are charged, is prepared in a similar manner; pure silver being dissolved instead of mercury, but it is too dangerous to be trifled with.

CONGRESSIONAL MOURNING.—The Exeter News Letter, in a recent article, shews up in full colors the ridiculous hypocrisy evinced by Members of Congress, in adjourning for several days together, on the plea of mourning for a person whom most of them cared nothing about, while their salaries of eight dollars per day were still going on; but the editor concludes that the nation can better afford to pay them for weeping than for making speeches, although perhaps there is no great choice between *wind* and *water*.

VARIETY

A cotemporary enquires "what is more comfortable about the first of January than to have a monstrous great bill, that you did not dream of, presented for payment?" Such New Year's presents are not uncommon.

A single school-district in the town of Manchester, N H., which eight years ago contained but 125 inhabitants, has now within its limits a busy population of nearly *ten thousand*.

The various manufacturing establishments in Boston, are said to give employment to about six thousand persons. The manufactures amount to nearly $10,000,000 per annum.

Ship building appears to be brisk at Cleveland, Ohio. There are now on the stocks, one 700 tons steamboat, three propellars, and several heavy draught schooners.

An ice cutting machine is in operation on the Schuilkill, and performs admirably. By the power of one horse, it has been made to cut eight hundred tons of ice in seven hours.

One of the Boston dailies issued an extra containing the message of Gov. Briggs, and in the haste of competition it was issued with the name of the ex-Governor, Davis. No harm done.

There are seventy divorce cases upon the trial docket, in the Court of Common Pleas, Hamilton Co., Ohio. The Yankee girls will be cautious about going to that county for husbands.

During the year ending Nov. 1st, upwards of 80,000 immigrants arrived at this port, and most of them proceeded to the West. An equal number probably arrived in the country by other routes.

Bela's Comet, which so alarmed the French astronomers in 1832, has again made its appearance. Its nearest approach to the earth will occur on or about the 12th of next month.

A writer in the Concordia Intelligencer says that if our native cherry, walnut, and maple were *made fashionable*, they would surpass in beauty the imported woods. There he is right.

An Express train on the English Great Western Railway lately ran from Exeter to London, 194 miles in *three hours and fourteen minutes*, running time:—about 54 miles an hour.

The two somewhat noted anti-slavery lecturers, Stephen S. Foster and Abby Kelly, were married at new Brighton, O., on the 21st ult. They were "old acquaintances."

The town of Cambridge, Mass., is moving on the subject of procuring a city charter. Some of its citizens would be mayors, but they might be content to call the place a *burrow*.

An eagle was killed near Montgomery, Ala., lately, which measured 8 feet 3 inches from tip to tip of his wings, and weighed 67 pounds. It is a shame to destroy such birds.

Italy contains 30,000 professional musicians, 2,600 comic artists, 1000 public dancers, 570 musical and 300 dancing operas. What a merry country it must be.

There have been built and registered in the city of Pittsburg and its vicinity, during the past year, forty-two steamboats, with an aggregate tonnage of 5400 tons.

Conscience appears to have been somewhat revived in Boston, on the first instant. Several gentlemen received letters containing money purporting to be remunerations for money or property purloined.

A member of the Maryland Legislature lately proposed to seize and sell all the free blacks in the State, and apply the proceeds to the payment of the State debt. The bill would not pass.

An exchange complains that the State Prison convicts are not compelled to study and practise law instead of being indulged in the pleasant recreations of mechanical trades.

The active capital of the house of Rothschild is ascertained to be $145,000,000. Besides this the partners are supposed to possess private fortunes worth $50,000,000, or $200,000,000 in all.

There were about nine thousand marriages consummated in the *little* State of Massachusetts during the last year. Who says that the Yankees are deficient in gallantry?

The word "news," literally signifies intelligence from all quarters. This definition appears rational when we consider that the word is comosed of the initials of the four cardinal points—N. E. W. S.

An Irishman proposes to get his life insured, that when he dies he can have something to live on, and not be dependant on the cold charities of the world, as he once was.

A case is reported of a man, who was overwhelmed with difficulties, but got completely out of his troubles by just drinking half a point of cold water every time he was thirsty.

A new kind of light has been introduced into the Light House of Boston harbor, which casts a shadow distinctly at the State House, *six miles distant!*

It is said that the stock, (200,000,) for a suspension bridge across the Niagara river is already engaged.

The drought is so great in Western Illinois, that the people in some places have to carry their grain a hundred miles to be ground.

A country editor tells his subscribers that he has been compelled to adopt the cash system, but will continue to receive "potatoes at par."

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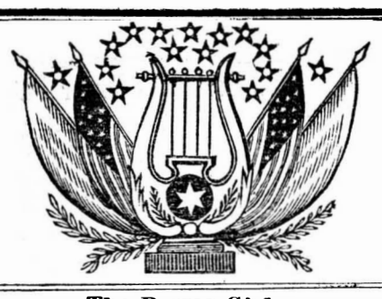


The Beggar Girl.

With little basket on her arm to hold the proffered store,
Each morning finds a Beggar Girl low tapping at the door;
And there she stands with wistful look yet silent all the while,
And when she takes the pittance small, for shame she cannot smile.

Her father lived a drunkard's life, and perished in the snow,
And now her mother's sick and faint beneath her load of wo;
And so she comes with down-cast eye, and visage white with grief,
With all the power of pictured want, mutely, to ask relief,

Though clad in garments thin and torn, they're always neat and clean,
And something in her wan pale face, so mournfully serene
Bespeaks a heart where truth abides in all its vernal hues,
And innocence in morning prime in scattering holy dews.

But ah! her lot is hard indeed, and all her joys must die;
To look a rude world in the face, with its cold and frosty eye!
And yet she seems so angel-like, amid desponding fears
That Pity marks the path she takes, and lays its dust with tears.

God bless the little Beggar Girl with friend of open hand,
To weigh her down with charities, and bid her hopes expand;
And while bereft of earthly goods, those treasures insecure,
O fill that pure young heart of hers with "riches that endure!"

Who is My Neighbor?

Thy neighbor? It is he whom thou
Hast power to aid and bless;
Whose aching heart and burning brow
Thy soothing hand may press.

Thy neighbor? 'Tis the fainting poor,
Whose eye with want is dim,
Whom hunger sends from door to door;
Go thou and succor him.

Thy neighbor? 'Tis the heart bereft
Of every earthly gem;
Widow and orphan helpless left;
Go thou and shelter them.

Thy neighbor? 'Tis the weary man,
Whose years are at the brim,
Bent low wish sickness, cares and pains;
Go thou and comfort him.

Thy neighbor? Yonder toiling slave,
Fettered in thought and limb,
Whose thoughts are all beyond the grave;
Go thou and ransom him.

O pass not, pass not heedless by;
Perhaps thou canst redeem
The breaking heart from misery;
Go share thy lot with him.

A Golden Rule.

One appeal to God above,
Supplication for his love,
Daily offer. Peace of mind
Makes thee happy, good and kind.

Dally sing one cheerful song,
From the bosom's fiery throng;
Daily do *one* noble deed,
Daily sow one blessing's seed.

Daily make one foe thy friend,
Daily from thy surplus spend;
Daily when the gift is thine,
Write one verse in strains divine.

Daily see kind nature's face;
Daily seek for some new grace;
Daily dry one sufferer's tear,
Daily one grieved *brother* cheer.

Daily drink from sparkling eye
Sweeter rapture; soar on high!
Then thy life will know no night,
And thy death be robed in light.

ENAMILLING CAST IRON VESSELS.—Many persons in this country have been curious to know the process by which the beautiful coating of white enamel, resembling China porcelain, is applied to the interior of cast iron culinary articles, and some have attempted to practice this art, but with indifferent success. The following process, however, is believed to be at least equal to that practised in Europe, if not precisely the same: The vessels are cleaned as perfectly as possible with diluted sulphuric acid; then washed with pure water, and filled or coated inside with a thin paste, composed of quartz, borax, feldspar and clay. These ingredients are first melted together, and then reduced to an impalpable powder, and sufficient water added to form a thin paste. This paste being applied as above mentioned, which may be done by first filling a vessel with it, and then pouring it out into a another vessel; it is powdered over with a linen bag, cantaining a very finely powdered mixture of feldspar, carbonate of soda, borax, and a little oxyde of tin. Then let the vessels dry, and heat them in a furnace, by which this enamel will run together and become beautifully glazed.

A MAMMOTH SLEIGH.—A sleigh has been built at Bolton, Mass., forty-five feet in length, nine feet wide, and fifteen feet high; it has twenty seats, and will accommodate 140 passengers. Its proper team, when full freighted, is twenty-six horses, though sometimes excursions are made with only eight. It is finished in excellent style, and is very convenient for large parties, as well as being a considerable curiosiy.

MUSKETS.—It is estimated that there are at least one million finished muskets in the different armories and arsenals of the Union.

Galvanism.

(Continued from No. 18.)

ELECTRO-MAGNETIC POWER.—There has been considerable excitement on the subject of the newly discovered power of electro-magnetism, and it was at one time confidently expected to supersede steam as a motive or driving power for mills and steamboats. This may yet be effected, but not until further discoveries have been made in this science, although several model cars and small machinery have been operated thereby with great velocity. Various machines have been invented and constructed for the purpose of producing this power; some of them very intricate, complicated and difficult to be understood; but of these, the most powerful that we have seen was one made by Mr. Davenport, on a plan so simple as to be easily explained. We have, in former numbers, explained the principles of the electro-magnet, with its helices and armature, by which it is understood that a powerful magnetic attraction occurs between the magnet and the armature, when the circuit connection is made, and the distance between the two does not exceed half an inch. Suppose then that two such magnets were placed a few inches apart, and the two armatures, attached to the two ends of a horizontal lever, mounted on a central fulcrum pivot, so high that when one armature is brought down to one magnet, the other armature is elevated half an inch. These two magnets are disconnected and independent of each other, but the connections of each with the battery, are so arranged that when one armature comes in contact with its respective magnet, the connection between this magnet and the battery is broken, while that between the other magnet and the battery is at the same instant closed. By means of this arrangement, a rapid vibratory motion is produced in the lever, which is communicated by a connecting rod to a crank connected with a fly-wheel, which is thus kept in constant and rapid motion. A single pair of plates is sufficient for the purpose of operating one of these machines, when the battery and the machines are near together; but with a consecutive battery of fifty pairs, a machine may be operated at the distance of 100 miles from the battery. Another mode of producing power, is by means of the attraction existing between the helix and the magnet. A full sized helix, having a hollow space through its centre half an inch in diameter, and being in the connected circuit of a battery, exerts a strong attraction towards a round iron bar placed within, and which then becomes a bar magnet. This attraction is so strong as to sustain the weight of such a bar, eight inches long, and 3-8 in diameter, when suspended in a vertical position; and a force equal to more than double the weight of the bar is required to lift the bar out of the helix. Wherefore, by placing two such helices a few inches apart, and attaching two such iron bars to the two ends of a horizontal vibrating lever, mounted a little above them, and so adjusted as to allow each bar alternately to descend into the hollow centre of its respective helix, a greater quantity of power may be obtained than by any other arrangement of equal extent. (We shall present, in a future number, a large engraving, with full description, of the best constructed electro-magnetic machine for actual service, in driving a small lathe or other light machine: but it is neither convenient nor expedient for this number.) It has been erroneously supposed, that the magnetic attraction was constant and uniform, when applied to the propulsion of machinery, whatever might be the velocity of such machine; and hence it was inferred that by producing a great speed or velocity in the machine, a great quantity of power might be obtained from an apparatus of moderate dimensions. But results have proved that the force of attraction is less, when the armature is approaching the magnet, than when both are stationary; and that this attraction is diminished in proportion to the increased velocity of the motion. The discovery of this fact has destroyed the confident hopes of many who had devoted much time and money to the introduction of electro-magnetism as a propelling power.

To be continued.

SHAMEFUL SEVERITY.—A butcher's boy, in Oxford Market, London, was employed in sorting some waste paper, which had been purchased at a common rag-shop, and among a quantity of useless circulars discovered an envelope directed to Lord Ashby, containing a hundred pound note—The boy gave it to his mistress, who immediately carried it to Lord Ashby. The "noble Lord" instantly turned the woman out of his house, and the next day entered a prosecution against both her and the boy for the felenous act of breaking open the letter! The above facts are stated in the London Times.

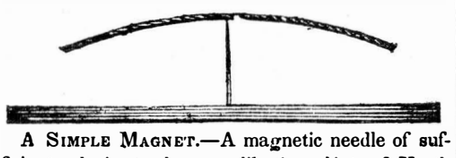
THE "ROCK HARMONIONS," and "MUSICAL PINE STICKS," are the names of two very comical and curious musical instruments or *apparatuses* now being exhibited in this city. The first consists of a series of thin pieces of rock, of different sizes, placed across two beams covered with straw. These being played upon with hammers, give forth music loud and melodious. The other consists of a similar arrangement of a series of pine sticks, or strips of soft pine boards, which being played upon with light mallets, astonish the ears of the audience with their soft melodious notes. The proprietor, who is also a skillful performer, is reaping a golden harvest, and plainly proves the Sam-Patchian maxim "that some things can be done as well as others."

ENVY.—The New York Mirror snarls malignantly, at the custom adopted by the editors of many of the best papers, of copying into their own columns, the complimentary notices from other papers. This looks like shear envy; the Mirror gets few or no compliments, and consequently, evinces the disposition of an old maid on the subject of the mutual attentions of her more favored nieces.

SPORTING IN MISSISSIPPI.—A party recently went out from Winsten, and in a few days killed forty one deer, and fifty one wild turkeys. Other parties had been also successful, one having taken forty deer in two days.

THE MAGNETIC TELEGRAPH.—There are yet a large portion of the community who cannot comprehend any considerable advantage to be derived from the use of the telegraph, further than to gratify curiosity somewhat earlier than is done by the mail facilities. For the better satisfaction of that class, we submit the followieg examples of ordinary communications, which may be supposed to pass between this city and Boston, with the time required for the transmission of each, and the expense thereof.

	Minutes.	Cents.
The Great Western has arrived.	11-2	10
Fire is raging in South street near Pine.	21-2	25
Inform L. Stark. 35 South Market street flour has advanced 50 cents.	21-2	30
Brig Huntress has arrived with $50,000 in specie.	21-2	25
Inform S. Reed, 5 India wharf, Brig Reaper is on shore.	21-2	25
To A. Moore, 19 Union street, has G. White returned?	21-2	25
Answer, G. White has returned, will remain 10 days.	21-2	25
Inform S. Mason, 13 long wharf, ship Fox has arrived.	11-2	25
Inform U. P. Baker, 5 Exchange street, Erie R. R. stock at 93.	21-2	30
Will M. Ford, 10 Ann street, send T. Bryant $500?	21-2	25
M. Ford, to T Bryant, yes, by next mail.	11-2	20
To T. W. Sturgis, 25 Tremont street, S. R. has arrived.	21-2	25
Send express to S. H. Durham, at Andover. His brother is dead.	21-2	25
To A. Clark, 17 Merchant's Row, cotton has advanced 1-3.	21-4	25
To. B. Wheeler, 15 Wall street, Chester Bank has failed.	2	25
S. Moore to B. Walker, 25 State street, advises him to effect insurance on brig Oregon.	23-4	35
T. Bragg, to A. Bond 33 Central wharf, effect insurance on ship Marion $25,000, from Canton 15 June.	31-2	35
The fire is subdued in S. street.—Nos. 85, 86 & 87 destroyed.	11-2	20
Will B. Cram, 10 Ann street, accept T. Pickering's draft for $2500, answer by Telegraph, M. Brooks.	21-2	35
To M. Brooks, T. P's. draft will be accepted, B. Cram.	13-4	25
To R. Blake 15 Pond street, ship Baltic spoken 60 days out, all well	2	30
C. Bird to G. Fox 15 Pine street, is G. Santhurn good for $5000.	2	30
G. Fox to C. Bird. Santurn is doubtful.	11-2	25



A SIMPLE MAGNET.—A magnetic needle of sufficient polarity to shew readily the points of North and South may be readily produced by either sailors or hunters, if they have but an iron nail, or a piece of wire, and the means of twisting it while cold. A piece of iron wire, four inches long, being twisted from left to right, or in such a manner that the ridges, or seams produced by the twist, will run spirally in the direction of a cork screw; and the wire thus twisted will have become magnetic, and if mounted on the point of a needle, as shown in the cut, it will readily assume the position of North and South. In this instance, the magnetic property is evidently the effects of electricity, though without a galvanic battery.

THE WAR PROSPECT.—There can be no war says the Washington Journal, between this country and Great Britian, unless wantonly provoked by our own government—for at this moment the Emperor Nicholas, whose dominions compose one-seventh of the habitable globe, with a population of 70,000,000, a well armed militia of 18,000,000 men, a standing army of 1,000,000 veteran troops—200,000 of which are well mounted cavalry—a navy of 50 ships of the line, with frigates sloops, floating batteries and gunboats almost without number, and manned by 60,000 men, well skilled in naval warfare—besides the shores of the Euxine and the Baltic incessantly resound with the blows of the ship carpenter, as month after month new ships are launched upon their waters. This ambitious Emperor, in the prime of life, with an overflowing treasury, and an annual revenue of $50,000,000, is now overshadowing the North of Europe, and apparently aiming at the sovereignty of the World. He holds possession of Crimea, where is a naval depot of the Euxine fleet; an immense navy manned by 30,000 seamen, armed provisioned, and ready to unmoor at a moment's warning. On the supposition that this mighty preparation on the part of Russia is to dispute John Bull's title to the supremecy on the ocean, it will be readily seen that if "our government will let Eng-gland alone, they will let us alone."

INCREASE OF POPULATION.—It has been estimated by the President of the United States, that the population doubles every 23 years. A writer on the subject gives reasons for believing that the increase will be equal to doubling the population as often as once in thirty years for many ages to come. At this rate the population would be upwards of 200,000,000, in 1846; and in 1000 years it would be equal to 100,000 persons to every square foot of ground in the United States, or in other words, about sixty miles deep over the entire surface.

COMPLIMENTARY TRIBUTE.—The King of Prussia has transmitted to Dr. Howe of Boston, a medal tor "scientific merit," as a testimony of His Majesty's appreciation of Dr. H's services in the cause of the institutions of the blind, and of his method of instructing the deaf and dumb, who are also blind. The medal is of gold, of large size and beautiful workmanship. It is not a little singular that this tribute should come from the country in which Dr. Howe was imprisoned in 1830, for his interest in behalf of the Poles.

Railroad Intelligence.

Three routes between Cleveland and Columbus, O., have been surveyed: one through Mount Vernon; another through Harrisville and a third through Delaware.

The stock of the Saratoga and Washington, N. Y., Railroad is all taken up, but the work may be delayed for some time.

The Legislature of Tennessee have chartered a company to construct a railroad from Nashville to to Chattanooga, the terminus of the Western and Atlantic Railroad.

A meeting has been held, and resolutions passed in favor of the construction of a railroad from Rutland, Vt., to Adams, Mass., and Pittsfield. This, with the Western, Housatonic, and the New York and Hartford roads will form a continuous route rom Rutland, Vt., to New York.

The Boston and Providence Railroad Company have proposed informally to construct a branch from their road to the Providence and Worcester Railroad, joining the former near Dogeville, and the latter near Pawtucket. It is expected that the Stonington R. R. Company will lay a track from the depot of the Providence and Worcester road to the Stonington road, so that the ferry will be abandoned, and passengers can proceed from Boston to Stonington without changing the cars. The directors of the Providence and Worcester Railroad, have decided on locating their road through Pawtucket; and a branch will be made from thence to the Boston and Providence road.

The citizens of Newport, R.I., contemplate constructing a railroad between that place and Fall River.

The receipts on the Fitchburg Railroad, in eleven months, have been $196,000, and the nett earnings $130,000.

The receipts on the Western Railroad for the year 1845, amount to $810,000, the nett eanings $450.000. The receipts for the week ending Jan. 2, were $14,378.

USING WATER TWICE FOR MILLS.—There has been several water-wheels introduced, in which it was pretended that the water which operated them, was used twice in passing through the wheel; thus giving it an extraordinary power and advantage over other wheels. Now the fact is, that the only power that can possibly be derived from water, is by its descent, in which, by the force of gravity it communicates as much power, as would the descent of any other substance of equal weight, and no more. If water is, in its descent, used twice over, it is evident that only a part of its natural power is obtained in the first instance; and that only a *balance* remains for the second application.

CRYING ETC.—A French Physician has published a long article in favor of groaning and crying, which he recommends as useful and wholesome exercise for one who is in trouble or pain. He recommends "roaring lustly,' in case of broken limbs, as this course exhausts the nervious system, and affords relief. It is no less reasonable, we presume, for people on joyful occasions to laugh and sing, which exercises, by restorting an equilibrium of nature, are also conducive to health, whereas affection and restraint are generally pernicious.

OLIVER SMITH'S BEQUESTS.—We offered a sample of our sentiments on this subject, since which we have seen the remark in the Hampton Herald that "the will was so hedged about with conditions that any one designed to be benefitted by it, had better go to work to earn the money, than to accept it in the way proposed.

FARMERS CLUB OF THE AMERICAN INSTITUTE.—This Club meet the first and third Tuesday in every month, at 12 o'clock, io the Repository, rear of the City Hall. A greater or less number of Farmers are always present, and communicate, freely, information, experiments, &c. Any one is at liberty to speak and make enquiries. The meetings are very interesting, and any friend of agriculture may attend without any charge. This Club has been the means of inducing the formation of thousands of other clubs, which are spreading improvements far and wide, and will be the means of promoting agricultural improvements to a wonderful extent.

BAGLEY'S GOLD PENS.—We alluded to this subject in our last; since which we have been almost constantly using one of them, and although it was at the first the best pen we had ever seen, it has been constantly improving since. If it keeps on thus improving, it will surely write alone in less than six months. They are undoubtedly the cheapest pens in use.

BAY STATE FARMER AND MECHANIC'S LEDGER.—The publication of a new paper, under this long title, has been commenced at Worcester, Mass., by *Clark & Everett*. From the specimen before us we judge it to be a very troublesome paper, at least in one respect:—whoever takes it up will not be content to lay it down, till they have perused 28 columns of it.

A FIRST RATE PAPER.—The "Iron City," published at Pittsburgh, Pa., by Whitney, Duman, &c., is worth just 9 of ordinary, common sort of newspapers. It is well worthy of the patronage of those who reside even in this hot-bed of newspapers—N. Y. city.

THE LIGHT SHIP:—(*a newspaper for Sailors.*)—We are truly glad to see that mariners are accommodated with so brilliant and interesting a paper as the one published under the above title, at 118 Nassau street. It is, in fact, just such a paper as sailors should have, and there is no reason to doubt it will receive extensive patronage from that useful and worthy class.

CHEAP REFRESHMENTS.—Mechanics and others, who occasionally visit this city, will find every variety in the victually line, in good style, and lowest price, at Johnson's, 144 Fulton street. See advertisement in another column, and "don't forget the number."

WHAT SHALL WE DO TO BE SAVED.—To this question, as many different answers are virtually given, as there are different denominations of professed christians, and yet, most of them at variance with the most plain, pointed and simple instructions given by the Saviour, himself. The reprehension, written by the prophet Isaiah, "In vain do they worship me, teaching for doctrines, the commandments of men," and which was applied by our Lord to the hypocritical pharisies, is even more applicable to the proffessedly theological leaders of the present day. The popular and dignified churches, regard all those as heretics, who take the scriptures of truth for their guide, independently of the preaching, teaching and traditions of the reverend clergy; and it is a lamentable fact, that nearly all the members who constitute those churches, follow the church,s doctrines, and clerical constructions, instead of examining the Bible to see whether the leaders are right or wrong. There is scarcely, a point of peculiarity which is observed by popular church members, and which constitutes the difference between them, and the world of nonprofessors, but what has been instituted without any gospel authority. Our Saviour said explicitly, "He, that hath my commandments and keepeth them, he it is that loveth me; and he that loveth me, shall be loved of my Father." (John, xiv 21.) and again, "If ye keep my commandments, ye shall abide in my love." (John, xv 10.) This, then, is the true answer to the question "What shall we do to be saved." The "commandments" of Christ are generally explicit and plain; and require no extraordinary literary attainments to understand the true import and signification thereof; but to so construe and mistify them, as to conceal their ostenseble import, and reconcile them to the indulgence of pride, luxury and worldly honor, requires all the tact and skill which can be derived from a theological, in addition to an ordinary collegiate education. "Lay not up for yourselves treasures upon earth," is one of those commandments, and a very plain one. "Sell that ye have, and give alms," is another. "Swear not at all," is a very conspicuous commandment. Others enjoin childlike humility. Yet these, and nearly all others of the most pointed and essential commandments, are slightly passed over, or construed to mean anything else; while the pretended duties of joining the churches, building meeting houses, paying rich salaries to ministers, keeping the Sabbath, attending church, supporting a choir of singers, and observing many other customs which are no where commanded by the Lord or his apostles, are virtually enjoined and required, as the main points of christianity. But know, immortal man, that this is *not* the way to be saved. You must discard the unwarranted traditions of men; study, learn and obey all the commandments of Christ, according to the plain, ostensible sense thereof, and submit to have your name cast out as evil, and to be reviled as a heretic—which will most assuredly be the case, if you do thus obey—and trust the consequences to Him who best knew what course of conduct was or would be, the most perfectly consistant with your eternal well being.

THE ONE LEAF.—There was once a caravan crossing, to the north of India, and numbering in its company a godly and devout missionary. As it passed along, a poor old man was overcome by the heat and labors of the journey, and, sinking down, was left to perish on the road. The missionary saw him, and, kneeling down at his side, when the rest had passed along, whispered into his ear, "Brother, what is your hope?" The dying man raised himself a little to reply, and with a great effort succeeded in answering, "the blood of Jesus Christ cleanseth from all sin!" and immediately expired with the effort. The missionary was greatly astonished at the answer; and, in the calm and peaceful appearance of the man, he felt assured he had died in Christ. "How, or where," he thought, "could this man, seemingly a heathen, have got this hope?" And as he thought of it, he observed a piece of paper grasped tightly in the hand of the corpse, which he succeeded in getting out. What do you think was his surprise and delight, when he found it was a single leaf of the Bible, containing the first chapter of the first Epistle of John, in which these words occur? On that page the man had found the gospel.

IDEA OF THE DIVINITY.—Banish all material ideas of a Deity, and do not let your imaginations struggle to find its way upward to some material heaven, with indefinite and idle conceptions of a monarch seated on a throne. The striking and beautiful metaphors of the Bible never were intended to give us this idea. God is a spirit, it says in its most emphatic tone. Where he acts, there only can we see him. He is the wide-spread omnipresent POWER which is everywhere employed—but which we can never see nor never know while in our present state.

WOMEN.—Judge Lewis says, "God bless the sex! Ever foremost in the work of charity—always ministering to the sick—lingering longest at the cross—speeding earliest to the sepulchre! They never erred but once, and if that error had been committed at a later period of the world, after four thousand years of bright and lovely deeds—the accusing Spirit had carried the offence to heaven's Chancery in vain!"

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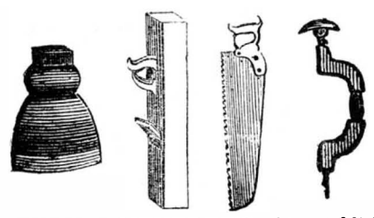

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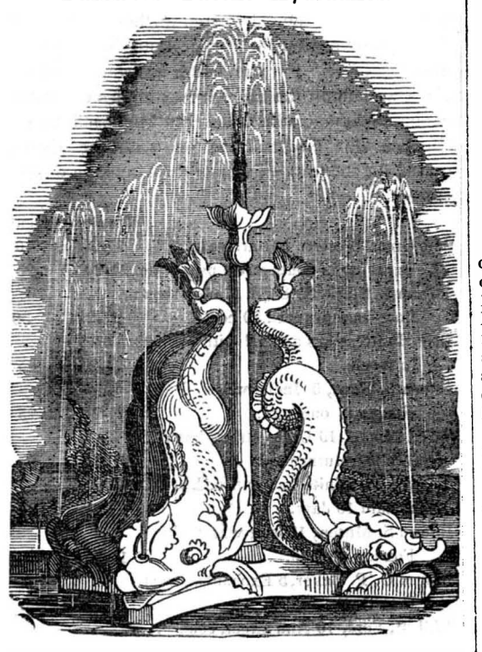

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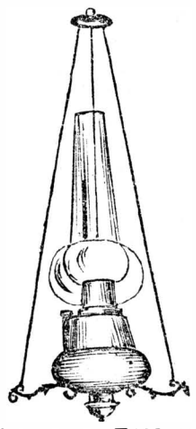

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" Chicken,	18d	Veal Pie,	6d
" Duck,	18d	Beef Steak Pie,	6d
" Beef,	6d	Chicken Pie,	12d
" Pork,	6d	Mush and Milk,	6d
" Veal,	6d	Rice and Milk,	6d
" Lamb,	6d	Lamb Pot Pie,	6d
" Pig,	12d	Fried Fish,	6d
Boiled Chicken,	12d	Fried Clams,	6d
" Mutton,	6d	Ham and Eggs,	12d
" Corned Beef,	6d	Chicken Soup,	6d
" Pork,	6d	Beef Soup,	6d
" Fish,	6d	Coffee,	6d

Dessert.

Suet Pudding	6d	Mince Pie,	6d
Indian Pudding,	6d	Apple Pie,	6d
Rice Pudding,	6d	Peach Pie,	6d
Plum Pudding,	6d	Plum Pie,	6d
Bread Pudding,	6d	Pumpkin Pie,	6d
Apple Dumplings,	6d	Custard Pie,	6d

Breakfast and Tea.

Beef Steak,	6d	Hot Corn Bread,	6d
Veal Pie,	6d	Indian Cakes,	6d
Mutton Chops,	6d	Boiled Eggs,	6d
Ham and Eggs,	12d	Fried Eggs,	6d
Fried Tripe,	6d	Toast,	6d
Fried Sausages,	6d	Hot Muffins,	6d
Fried Fish,	6d	Hot Rolls,	6d
Fried Clams,	6d	Tea,	3d
Fried Liver,	6d	Coffee,	3d

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WIRE WINDOW SHADES,
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do. GRATE do.
do. HALL AND OTAER DOORS, &c.

MANUFACTURED to order, in great perfection, of any size or shape, and elegantly painted with any Landscape, Lettering, or other devices or colors required.

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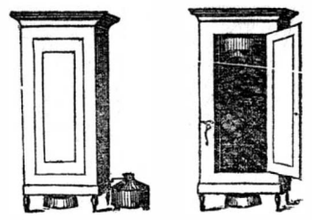
MANUFACTORY, 189 Broadway, N. Y. nov9.

Locke's Portable Shower Bath.



THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the aid of servants, and withodt having a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st. JOHN LOCKE.
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